

**REMARKS**

**General Remarks**

With this Amendment, Applicants cancel Claims 25 and 26. Therefore, Claims 1, 2, 6-8, 10, and 13-18 are all the claims currently pending in the present application.

Claims 1, 2, 6, 7, and 10 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kondo et al., “Fabrication of Long-Period Fiber Gratings by Focused Irradiation of Infrared Femtosecond Laser Pulses,” Optics Letters, Vol. 24, No. 10, May 15, 1999 (“Kondo”), in view of Bilodeau et al., U.S. Patent No. 5,495,548 (“Bilodeau”).

Claim 8 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kondo, in view of Bilodeau and Kircher, U.S. Patent No. 4,537,469 (“Kircher”).

Claim 13 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kondo, in view of Bilodeau and Kershaw, U.S. Patent No. 6,154,591 (“Kershaw”).

Claim 14 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kondo, in view of Bilodeau and Koops et al., U.S. Patent No. 5,982,962 (“Koops”).

Claim 15 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kondo, in view of Bilodeau and Starodubov, U.S. Patent No. 5,881,188 (“Starodubov”).

Claim 16 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kondo, in view of Bilodeau and Modavis et al., U.S. Patent No 5,647,040 (“Modavis”).

Claim 17 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kondo, in view of Bilodeau and Albrecht et al., U.S. Patent No. 6,591,034 (“Albrecht”).

Claim 18 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kondo, in view of Bilodeau and Komatsu, U.S. Patent No. 6,192,170 (“Komatsu”).

Claim 25 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kondo, in view of Albert et al., U.S. Patent No. 6,256,435 (“Albert”) and Scifres et al., U.S. Patent No. 5,282,080 (“Scifres”).

Claim 26 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kondo, in view of Albert and Katayama et al., U.S. Patent No. 5,617,460 (“Katayama”).

Applicants respectfully traverse these rejections as follows.

**Claims 1, 2, 6-8, 10, and 13-18**

Regarding the Examiner’s rejections of Claims 1, 2, 6-8, 10, and 13-18 over Kondo, Bilodeau and the additional references listed above, Applicants respectfully submit that one of ordinary skill in the art at the time of the presently-claimed invention would not have been motivated to combine Kondo and Bilodeau as suggested by the Examiner because there is no suggestion of motivation for doing so in the references themselves or the knowledge available to one of ordinary skill in the art without resorting to impermissible hindsight.

Kondo describes a method for fabricating long-period fiber gratings using focused irradiation of infrared femtosecond laser pulses having a pulse width of 120 femtoseconds. Kondo teaches that thermal stability is a goal in the modification of the fiber gratings and that the treated fibers show thermal degradation at temperatures above about 500°C. (p. 647). In contrast, Bilodeau specifically describes a method for augmenting the photosensitivity to ultraviolet light of silica Ge-doped core optical waveguides by “locally heating a portion of a weakly photosensitive optical waveguide for a period of time sufficient to increase the density of defects

**Claims 25 and 26**

Claims 25 and 26 are cancelled.

**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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in the waveguide to a level required to enhance the waveguide's photosensitive response." (Col. 1, ln. 52 through col. 2, ln. 7; Fig. 1). More particularly, Bilodeau describes that the region of an optical waveguide that is to be photosensitized is "brushed" repeatedly by a flame having a temperature of about 1700°C, which is well above the 500°C mark for the Kondo fiber gratings. (Col. 1, lns. 46-67; col. 2, ln. 60). Further, the present invention as recited in Claim 1, for example, requires (as acknowledged by the Examiner) that the refractive index of the core section is modified thereby making thermal treatment unnecessary. Therefore, Bilodeau teaches away from both Kondo and the present invention.<sup>1</sup>

Because of the disparity between Bilodeau and Kondo and between Bilodeau and the present invention, the only possible motivation for the Examiner's proposed combination is Applicant's own disclosure, the reliance on which constitutes impermissible hindsight reconstruction under MPEP §2143.<sup>2</sup>

None of the additionally-cited prior art references supply the motivation or the teaching lacking in Kondo and Bilodeau. Therefore, in view of at least the above, Applicants submit that Claim 1 is patentable over the cited references and that Claims 2, 6-8, 10, and 13-18 are patentable at least by virtue of their dependence on Claim 1. Applicants respectfully request that the rejection of Claims 1, 2, 6-8, 10, and 13-18 be reconsidered and withdrawn.

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<sup>1</sup> MPEP §2141.02 (prior art must be considered in its entirety, including disclosures that teach away from the claims); MPEP 2145(X)(D)(2) ("It is improper to combine references where the references teach away from their combination," *citing In Re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983)).

<sup>2</sup> See also *In re Vaeck*, 20 USPQ 1438 (Fed. Cir. 1991).